

Applicant : Claire Hartmann-Thompson
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In the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled).
2. (Currently Amended) The composite material of claim [[1]] 5, in which the polymer matrix includes a polymer having a glass transition temperature at about room temperature or below room temperature.
3. (Currently Amended) The A composite material of claim [[1]] for sensing an analyte, comprising:

a polymer matrix in which the polymer matrix includes a polymer selected from polycarbosilanes, polycarbosiloxanes and polycarbosilazenes; and
a solid particulate filler dispersed in the polymer matrix, the solid particulate filler having functional groups capable of interacting with the analyte.
4. (Currently Amended) The composite material of claim [[1]] 5, in which the solid particulate filler is a functionalized filler selected from clays, synthetic fibers, aluminum hydroxide, calcium silicate, zinc oxide, carbon fiber, glass fiber, silica, alumina, alumina-silica, carbon black, carbon nanotubes, and fullerenes.
5. (Currently Amended) The A composite material of claim [[1]] for sensing an analyte, comprising:

a polymer matrix; and
a solid particulate filler dispersed in the polymer matrix, the solid particulate filler having functional groups capable of interacting with the analyte, and wherein in which the solid particulate filler is a functionalized polyhedral oligomeric silsesquioxane.

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6. (Currently Amended) The composite material of claim [[1]] 5, in which the solid particulate filler is functionalized with hydrogen bond acidic groups.
7. (Currently Amended) The A composite material of claim [[6]] for sensing an analyte, comprising:
a polymer matrix; and
a solid particulate filler dispersed in the polymer matrix, the solid particulate filler having functional groups capable of interacting with the analyte, wherein the solid particulate filler is functionalized with in which the hydrogen bond acidic groups, and wherein the hydrogen bond acidic groups are selected from phenolic and alcoholic alkyl groups.
8. (Currently Amended) The A composite material of claim [[6]] for sensing an analyte, comprising:
a polymer matrix; and
a solid particulate filler dispersed in the polymer matrix, the solid particulate filler having functional groups capable of interacting with the analyte, wherein the solid particulate filler is functionalized with in which the hydrogen bond acidic groups, and wherein the hydrogen bond acidic groups are selected from fluorinated phenols and fluorinated alcoholic alkyls.
9. (Currently Amended) The composite material of claim [[1]] 5, in which the solid particulate filler is functionalized with hydrogen bond basic groups.

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10. (Currently Amended) The A composite material of claim [[9]] for sensing an analyte, comprising:

a polymer matrix; and

a solid particulate filler dispersed in the polymer matrix, the solid particulate filler having functional groups capable of interacting with the analyte, wherein the solid particulate filler is functionalized with in which the hydrogen bond basic groups, and wherein the hydrogen bond basic groups are selected from amine groups, ether groups, cyano groups, nitrogen and oxygen heterocyclic groups, groups containing phosphorous-oxygen double bonds, groups containing a sulfoxide moiety, groups containing a sulfone moiety, groups containing a nitro moiety, and groups containing a nitroso moiety.

11. (Canceled).

12. (Canceled).

13. (Canceled).

14. (Canceled).

15. (Canceled).

16. (Canceled).

17. (Canceled).

18. (Canceled).

19. (Canceled).

20. (Canceled).